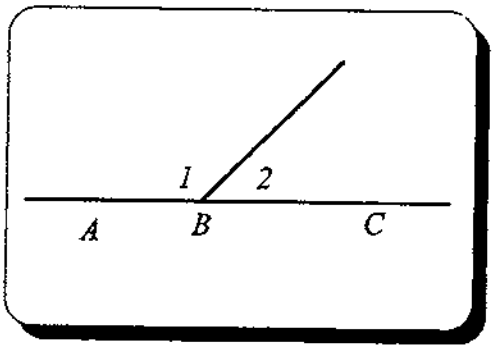
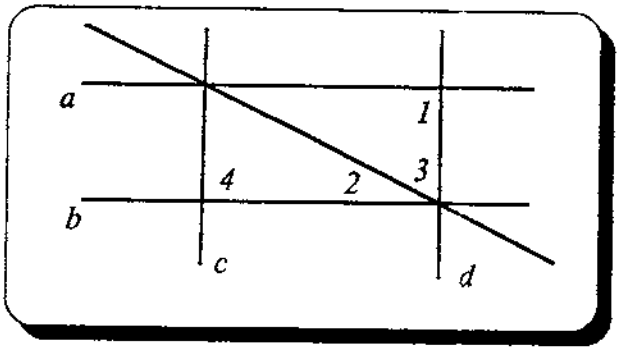


1. Find $m\angle 1$ if $m\angle 1 = (5x+9)^\circ$ and $m\angle 2 = (3x+11)^\circ$. Points A, B, and C are colinear.

a. 119 b. 109 c. 91 d. 71 e. not given

2. The measures of the angles of a triangle are in the ratio of 2 : 4 : 9 . Which one of the following is a measure of one of those angles?

a. 12 b. 36 c. 63 d. 105 e. not given



3. Which lines are parallel if $m\angle 1 = 90^\circ$, $m\angle 2 = 42^\circ$ and $m\angle 3 = 48^\circ$.

a. a || b b. a || c c. d || e d. c || d e. not given

4. If the graphs of x - ay = 10 and 2x - y = 3 are perpendicular lines, a =

a. 0 b. -1 c. -2 d. 1 e not given

5. How many points determine two distinct non-intersecting lines?

a. 6 b. 5 c. 4 d. 3 e. not given

6. $\Delta CAT \sim \Delta DOG$. If the perimeter of Triangle CAT = 7.6, CA = 3.0, AT = 2.8, and DO = 2.5, find DG.

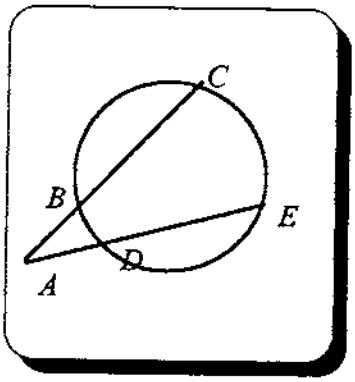
a. 1.5 b. 2.3 c. $\frac{7}{3}$ d. $\frac{75}{28}$ e. not given

7. If Angles 1 and 2 are verticals angles, Find x if $m\angle 1 = 4x^2$, and $m\angle 2 = 35 - 4x$.

a. -3.5 or -2.5 b. -3.5 c. -2.5 d. 3.5 or 2.5 e. not given

8. ABCD is a parallelogram. The measure of Angle BAD = (4x) degrees and the measure of Angle ABC is (6x - 30) degrees. Find the degree value of Angle BCD.

a. 39 b. 60 c. 76 d. 94 e. not given



9. Given a circle with two intersecting secants, $\overline{AC}$ and $\overline{AE}$, with AB =8, BC = 20 and AD = 14. Find the value of DE.

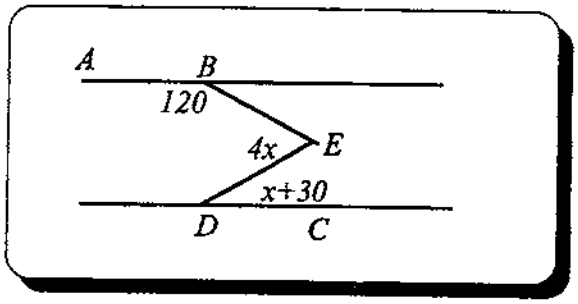
a. 2 b. 6 c. 12 d. 16 e. not given

10. If the medians of a triangle are 18, 15, and 15, then the area of the triangle is

a. $75\sqrt{3}$ b. 120 c. 144 d. 160 e. not given

11. At 4:15 p.m. the hands of a clock form, in degrees, an acute angle of

a. 45 b. 37.5 c. 32.5 d. 30 e. not given



12. Lines AB and CD are parallel. If the measure of three angles are given., find x.

a. 10 b. 30 c. 50 d. 60 e. not given

13. The sides of a triangle are 10, 17, and 21 inches. Find the length of the altitude to the 21-inch side.

a. 15 b. 9 c. 8 d. 6 e. not given

14. The measure of an interior angle of a regular n-gon is five times the measure of one exterior angle. How many sides does the polygon have?

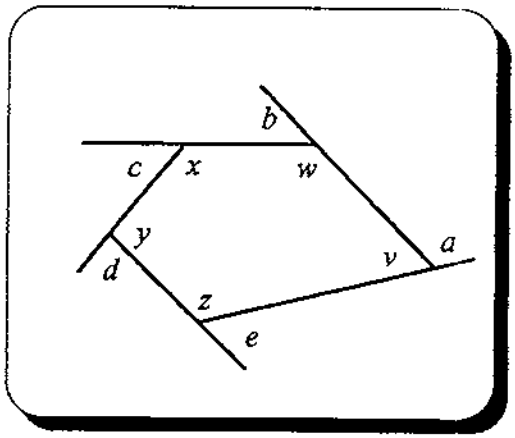
a. 60 b. 30 c. 12 d. 6 e. not given

15. A square ABCD is graphed on the coordinate plane with vertex A on the origin and vertex B on the point $(0, 4\sqrt{2})$. If vertex C lies in quadrant I, what is the equation of the line that contains the diagonal AC of the square?

a. $x + y = 8$ b. $x - y = 0$ c. $x + y = 4$ d. $x - y = 8$ e. not given

16. The parallel lines given by the equations $3x - 4y = 7$ and $6x - 8y = 9$ are a distance of how many units from each other?

a. 2 b. 5 c. 0.4 d. 0.5 e. not given

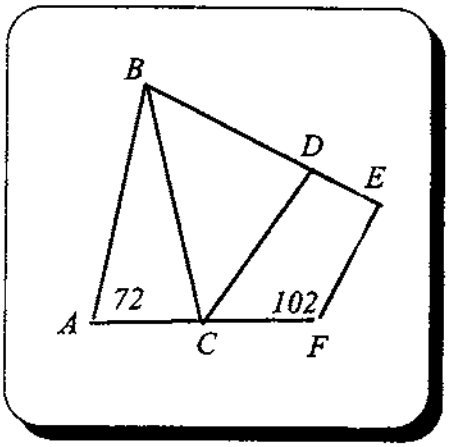


17. In the figure above, a, b, c, d, and e represent the measures of the exterior angles and v, w, x, y and z represent the mesures of the interior angles.
Determine (v +w + x + y + z) - (a + b + c + d + e).

a. 90 b. 180 c. 360 d. 540 e. not given

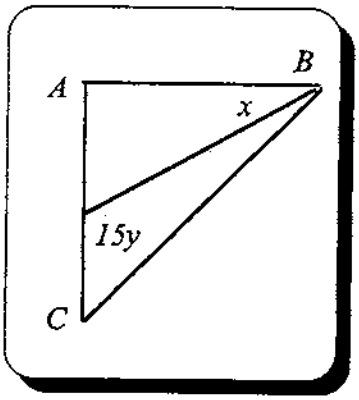
18. A radius of a circle bisects a chord of the circle into two segments each six cm. in length. the distance from the point of bisection of the chord to the circle is 1.5 cm. The radius of the circle is

a. 12 cm b. 12.25 cm c. 16.75 cm. d. 24 cm e. not given



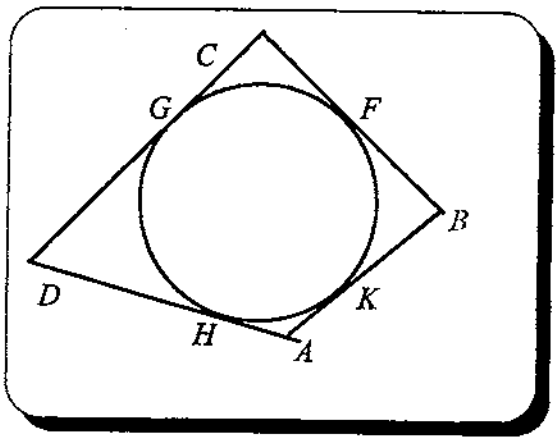
19. $\overline{AB} \perp \overline{BE}$, AB = BC, CD bisects $\angle BCF$. Find m$\angle DEF$. Answers are in degrees.

a. 96 b. 84 c. 78 d. 54 e. not given



20. For Triangle ABC, find a possible value for y in the figure above if Triangle ABC is a right triangle.

a. 12 b. 8 c. 6 d. 4 e. not given

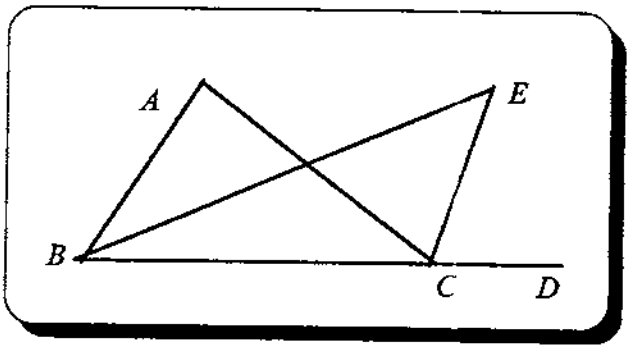


21. In the figure above, quadrilateral ABCD is circumscribed about Circle O with the points G, F, H, and K lying on Circle O. DG = 2, CF = 4, AK = 3, and KB = 5. Find the perimeter of quadrilateral ABCD.

a. 28 b. 14 c. 21 d. 29 e. not given

22. A boy wishes to cut the largest possible square out of apiece of cardboard in the shape of a right triangle, with legs of 8 inches and 12 inches. The side of the square, in inches, is

a. 4 b. 4.5 c. 4.8 d. 5 e. not given



23. In the given figure above $m\angle A = 85°$. $\overline{BE}$ bisects $\angle ABC$ and $\overline{CE}$ bisects $\angle ACD$. What is the measure of Angle E? All answers are stated in degrees.

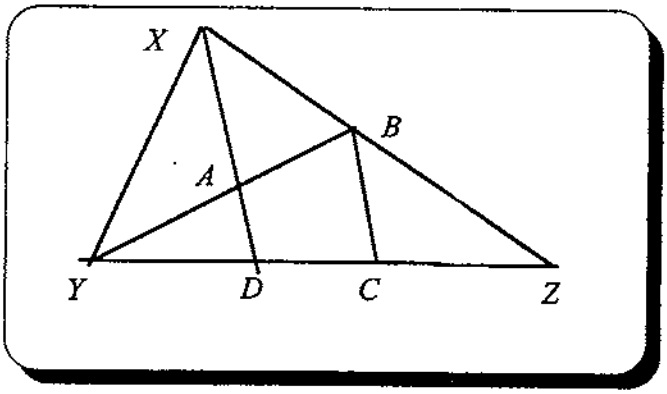
a. 30 b. 45 c. 47.5 d. 85 e. not given

24. If the ratio of an angle to its complement is 3 : 2, then find the measure of its complement. All answers are degrees.

a. 18 b. 36 c. 45 d. 54 e. not given

25. The area of a rhombus ABCD is 120 square units. BD = 10 units. Find the perimeter, in units, of rhombus ABCD.

a. 48 b. 52 c. 56 d. 64

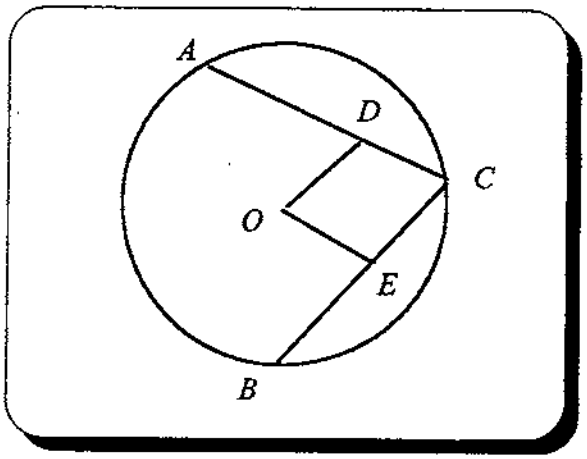


26. Given: $\frac{YD}{YZ} = \frac{2}{5}$ and $\frac{XZ}{BZ} = \frac{3}{1}$, XD || BC. Find the ratio of YA to AB.

a. 1 : 1 b. 2 : 1 c. 3 : 2 d. 3 : 1 e. not given

27. If $\sqrt{a+b}$ is the diagonal of a rectangle, the area of the rectangle is

a. ab b. 0.5ab c. $a\sqrt{b}$ d. $\frac{1}{2}\sqrt{ab}$ e. not given



28. Given Circle O as shown. DO = DC = CE = OE. Reflex angle DOE = 220° Find measure arc AB. All answers are in degrees.

a. 60 b. 70 c. 220 d. 280 e. not given

29. The line given by the equation x - y = 0 is rotated 75 degrees clockwise about the origin. the slope of the new line is

a. $-\sqrt{3}$ b. $\frac{-\sqrt{3}}{3}$ c. $\frac{27}{1000}$ d. $\frac{-\sqrt{2}}{2}$ e. not given

30. From point A south of a circle two secants and two tangents are drawn to the circle. the secants are of equal length and subtend arcs of 120° and 30°. The chord joining the points of tangency forms a 50° angle with the eastern tangent. Find the measure of the angle between the eastern tangent and the eastern secant. All answers are in degrees.

a. 17.5 b. 22.5 c. 35 d. 45 e. not given